

U. S. PTO Customer No. 25280

Case #5602

REMARKS

35 USC Section 103 Rejections:

Claims 1 – 5, 8 – 27, 32 and 33 were rejected under 35 USC 103(a) as being unpatentable over Otto (USPN 4,316,928) in view of Nun et al. (US 2003/0013795 A1).

Examiner's Arguments

The Examiner maintained the previous rejection with the same arguments as those stated in the previous Office Actions (see Office Actions dated 8/6/07 and 3/3/08 and Applicants' Responses dated 12/6/07 and 6/2/08).

However, the Examiner added the following additional comments:

1. Otto teaches broken fibers and fibers that contain lamella shaped protrusions (Example 1); and
2. Otto teaches the use of sanding paper grit size of about 600 (col. 8, lines 18-25) as abrasive means for forming integral microscopic surface structures;

Applicants' Arguments

In order to establish a *prima facie* case of obviousness, MPEP 2143 states that (a) there must be a motivation or suggestion to combine the references, (b) there must be a reasonable expectation of success if the combination is made, and (c) all the claim limitations must be considered. Applicants respectfully submit that (a) – (c) have not been met; and therefore, the instant claims are not obvious in light of the prior art.

Case law supports this statement in that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).” Additionally, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination. *In re Mills*, 916 F.2d 860, 16 USPQ2d 1430, 4132 (Fed. Cir. 1990).

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Applicants previously amended the independent claims to include the limitation that the fiber-containing substrate contains integral microscopic surface structures, as a result of exposing the substrate to a mechanical face-finishing process that utilizes diamond grit having a size of 600 to 1200. In contrast, the Otto reference teaches mechanical face-finishing of textile fabrics via the use of sanding paper having attached thereto grit in the size range of from about 16 to about 600. More specifically, Otto states (col. 8, lines 18-22):

Where the abrasive means is sanding paper, the grit of the sanding paper may vary widely, with grit sizes of about 16 to about 600, preferably between about 80 and about 400, e.g. about 180 to about 320 being appropriate.

See also the Table provided by Otto which illustrates that the grit size used in all the Examples was 240. In contrast, Applicants claim the use of diamond grit in the size range of from about 600 to about 1200. Otto fails to teach the use of diamond grit. Nun fails to teach mechanical face-finishing. Accordingly, Applicants respectfully submit that the instantly claimed invention is not taught or fairly suggested by the combination of Otto in view of Nun.

Additionally, Applicants point out that they are very familiar with the Otto reference, since the patent is assigned to Milliken Research Corporation, which is a wholly owned subsidiary of Milliken & Company. The instant pending application is assigned to Milliken & Company. The Otto process is known to result in a treated textile substrate that contains many broken fibers. Applicants point specifically to Examples 1, 3, 7 and 12 of Otto which provide a description of broken and/or cut fibers after exposure to the Otto process.

Thus, Applicants respectfully assert that this feature of Applicants' claims – that is, “having a plurality of substantially unbroken fibers” – has not been considered by the Examiner, as required by MPEP 2143. With regard to the Figures of Otto, which the Examiner relies upon to illustrate unbroken fibers, Applicants respectfully submit that they are difficult to view. Applicants cannot determine whether there are broken fibers or unbroken fibers. Thus, Applicants rely on the discussion of the test results provided by Otto in the Examples section.

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Such discussion clearly discloses the presence of broken fibers (see Examples 1, 3, 7 and 12 and discussion of Figures 8 – 9, 15 – 17, 35 – 36, 45 – 46). More specifically, with respect to Example 1, Otto states (col. 10, lines 27-29):

...the fibers of the fabric of the present invention are broken to some extent...

Otto also states that there are cut fibers present on the surface in Examples 3, 7 and 12. Applicant respectfully asserts that one cannot determine whether there are any uncut fibers present on the surface of the treated substrate, as taught by Otto. Accordingly, Applicant respectfully submits that this rejection is improper.

Additionally, Applicants respectfully continue to disagree with the Examiner's assertion that Otto and Nun et al. are from the same field of endeavor (i.e. treated fabrics) and therefore, the purpose disclosed by Nun et al. would have been recognized in the pertinent art of Otto. Accordingly, Applicants disagree with the Examiner's reasoning in that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Otto with the coating motivated by creating a self-cleaning, hydrophobic fabric as disclosed by Nun et al.

Applicants respectfully submit that Nun et al. fail to teach treating fiber-containing substrates. The only mention of something remotely close to such substrates is the disclosure of treating umbrellas with the coating of Nun et al. Applicants respectfully assert that such disclosure does not constitute a teaching or suggestion of treating fiber-containing substrates as taught and claimed by Applicants. The Examiner cites the disclosure by Nun of "shower curtains" as evidence of a teaching of a fabric. In response, Applicants continue to respectfully disagree with this assertion and have previously provided evidence ("Exhibit A"; 9 pages) that shower curtains are made from a calendaring process and are comprised of vinyl plastic, rather than of fabric. As such, Applicants respectfully maintain their assertion that Nun fails to teach any fiber-containing materials. Thus, Applicants contend that there is no basis for combining Nun with Otto in rejecting the instant claims.

Additionally, Applicants respectfully submit that there is no motivation, or apparent reason, to combine Otto with Nun. Otto does not teach or suggest the need for any further fabric treatments after the mechanical face-finishing of the fabric. Nun, which fails to teach the treatment of fiber-

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containing substrates, also fails to teach or suggest mechanical face-finishing treatments for the substrate. As such, what motivation is provided to one having ordinary skill in the art at the time of the invention to combine the particle-containing coating for non-fiber containing substrates as taught by Nun with the mechanical face-finishing treatments for fabrics taught by Otto, when Otto fails to teach the need for any additional fabric treatments? Applicants respectfully submit that there is none.

Furthermore, Applicants respectfully submit that, even if the combination were made, there is no reasonable expectation of success that modifying the substrates taught by Otto with the chemical treatment taught by Nun would result in Applicants' claimed invention. Nun teaches applying the chemical treatment to smooth, rigid and non-rigid surfaces [0064-0065]. The rigid substrates taught by Nun cannot even be treated by the processes of Otto because they cannot be fed through the mechanical apparatus. The flexible substrates, if treated by the processes of Otto, would result in the undesirable removal of the chemical treatment taught by Nun.

Furthermore, with respect to the Examiner's assertion that Applicants' claimed Roughness Factor would be inherent in the combination of Otto and Nun, Applicants respectfully disagree. While Applicants would be willing to replicate Example 1 of Otto in combination with the chemical treatment of Nun, Applicants respectfully note that Otto fails to provide the details of the face-finishing process used to treat the double knit fabric of Example 1. For instance, the speed at which the fabric was treated is not disclosed, nor is the grit size of the sanding paper that was used. Broad ranges of these parameters are provided in columns 7 – 9, but the exact parameters used to create the face-finished fabric of Example 1 are not provided by the reference. Hence, Applicants respectfully submit that it would be improper to make such an inherency determination, since the Examples provided by Otto cannot be properly replicated.

Accordingly, Applicants respectfully submit that the combination of Otto in view of Nun et al. fails to provide a *prima facie* case of obviousness, since (a) there is no motivation or suggestion to combine the references, (b) there is no reasonable expectation of success, even if the combination is made, and (c) all claim limitations have not been considered, as required by MPEP 2143. Thus, reconsideration and withdrawal of this rejection is earnestly and respectfully requested.

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Claims 40 – 45 were rejected under 35 USC 103(a) as being unpatentable over Otto (USPN 4,316,928) in view of Nun et al. (US 2003/0013795 A1) as applied to claim 32 and further in view of Morrison et al. (USPN 4,343,853).

Examiner's Arguments

The Examiner asserts that the disclosures of Otto and Nun et al. fail to teach the use of at least one additional layer of material. Thus, the Examiner relies upon the teachings of Morrison for a disclosure of a "two-face" fabric comprising a visible face fabric and a backing fabric (col. 2, lines 10-68). The Examiner states that the primary objective of the fabric is to create an article that is anti-microbial even though both fabric faces have not been treated (col. 3, lines 8-17).

Thus, the Examiner submits that since Otto and Morrison are from the same field of endeavor (i.e. treated fabrics), the purpose disclosed by Morrison would have been recognized in the pertinent art of Otto. As such, the Examiner states that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the combined invention of Otto and Nun et al. with the second fabric layer of Morrison motivated by imparting anti-microbial protection to two fabric faces while maintaining the advantages of naturally occurring, untreated fibers in one of the fabrics (Abstract, Morrison).

Applicants' Arguments

In order to establish a *prima facie* case of obviousness, MPEP 2143 states that (a) there must be a motivation or suggestion to combine the references, (b) there must be a reasonable expectation of success if the combination is made, and (c) all the claim limitations must be considered. Applicants respectfully submit that (a) – (c) have not been met; and therefore, the instant claims are not obvious in light of the prior art.

Case law supports this statement in that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).⁶ Additionally, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination. *In re Mills*, 916 F.2d 860, 16 USPQ2d 1430, 4132 (Fed. Cir. 1990).

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Applicants respectfully rely on the discussion presented above with regard to the deficiencies of Otto in view of Nun et al. and respectfully assert that the additional teachings provided by Morrison fail to provide for these deficiencies. Morrison teaches a multi-layered fabric having an antimicrobial agent contained therein (Abstract; col. 2, lines 17).

Accordingly, Applicants respectfully submit that the combination of Otto in view of Nun et al. and further in view of Morrison fails to provide a *prima facie* case of obviousness, since (a) there is no motivation or suggestion to combine the references, (b) there is no reasonable expectation of success, even if the combination is made, and (c) all claim limitations have not been considered, as required by MPEP 2143. Reconsideration and withdrawal of this rejection is earnestly requested.

Conclusion:

For the reasons set forth above, it is respectfully submitted that claims 1-5, 8-27, 32-33 and 40-45 stand in condition for allowance.


Should any issues remain after consideration of these Remarks, the Examiner is invited and encouraged to telephone the undersigned in the hope that any such issue may be promptly and satisfactorily resolved.

In the event that there are additional fees associated with the submission of these papers, authorization is hereby provided to withdraw such fees from Deposit Account No. 04-0500.

Respectfully requested,

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